

**ABSTRACT OF THE DISCLOSURE****THERAPEUTIC PLATELETS AND METHODS**

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A dehydrated composition is provided that includes freeze-dried platelets. The platelets are loaded with trehalose which preserves biological properties during freeze-drying and rehydration. The trehalose loading is conducted at a temperature of from greater than about 25°C to less than about 40°C, most preferably at 37°C, with the loading solution having trehalose in an amount from about 10 mM to about 50 mM. These freeze-dried platelets are substantially shelf-stable and are rehydratable so as to have a normal response to an agonist, for example, thrombin, with virtually all of the platelets participating in clot formation within about three minutes at 37°C.

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